

5 **SYSTEM AND METHOD TO FORM A COMPOSITE FILM STACK
UTILIZING SEQUENTIAL DEPOSITION TECHNIQUES**

 ABSTRACT OF THE DISCLOSURE

 A system and method to form a stacked barrier layer for copper contacts
formed on a substrate. The substrate is serially exposed to first and second reactive gases to
10 form an adhesion layer. Then, the adhesion layer is serially exposed to third and fourth
reactive gases to form a barrier layer adjacent to the adhesion layer. This is followed by
deposition of a copper layer adjacent to the barrier layer.